

WHAT IS CLAIMED IS:

1. An electronic key system comprising:

a transmitter that transmits the interrogational signal to a mobile unit;

a receiver that receives a code signal transmitted from the mobile unit in response to the interrogational signal;

a controller that checks a relation between the code signal and a memorized signal, and controls a state of a door of a vehicle based on a check result of the relation; and

an indicator that is disposed on the vehicle to indicate the state of the door.

2. The electronic key system according to claim 1, wherein the indicator changes an indication mode between a first condition that the door is locked and a second condition that the door is unlocked.

3. The electronic key system according to claim 1, further comprising:

a detection means for detecting an opening operation of the door that is operated by a user having the mobile unit,

wherein the controller sets the door of the vehicle in an unlock-standby state when the code signal transmitted from the mobile unit is authenticated when the user having the mobile unit approaches the vehicle, and unlocks the door when the opening operation of the door is detected by the detection

means in the unlock-standby state, and

the indicator starts to indicate the unlock-standby state of the door in a certain indication mode when the door becomes in the unlock-standby state, and the indicator changes the indication mode when the door is unlocked.

4. The electronic key system according to claim 3, wherein the indicator is turned off when a certain time elapses or an engine of the vehicle is started.

5. The electronic key system according to claim 1, wherein the indicator starts to indicate that the door is unlocked when the door is closed after a user having the mobile unit gets out of the vehicle, and

the indicator changes an indication mode to indicate that the door is locked in response to a lock of the door after the door is closed.

6. The electronic key system according to claim 5, wherein the indicator is turned off when a certain time elapses.

7. The electronic key system according to claim 1, wherein the indicator indicates the state of the door when the state of the door is changed.

8. An electrical key system for a vehicle that has a

first door and a second door, comprising:

a transmitter that transmits an interrogational signal to a mobile unit;

a receiver that receives a code signal that is transmitted from the mobile unit in response to the interrogational signal;

verification means for verifying the code signal against a memorized signal;

determination means for determining whether the mobile unit exists near the first door or near the second door when verification means verifies the code signal;

control means for controlling states of the first door and the second door based on the verification of the verification means and the determination of the determination means;

a first indicator that indicates the state of the first door; and

a second indicator that indicates the state of the second door,

wherein the control means controls the first indicator and the second indicator so that the first indicator and the second indicator indicate in different modes when the state of the first door is different from the state of the second door.

9. The electronic key system according to claim 8, wherein when the determination means determines that the mobile unit exists near the first door, the control means

controls the first door so that the state of the first door is shifted from a locked state to an unlock-standby state and controls the second door so that the state of the second door is maintained in the locked state, the first indicator indicates the unlock-standby state of the first door in a first mode, and the second indicator indicates the locked state of the second door in a second mode.

10. The electronic key system according to claim 8, wherein when the determination means determines that the mobile unit exists near the first door, the control means controls the first door so that the state of the first door is shifted from an unlocked state to a lock-standby state and controls the second door so that the state of the second door is maintained in the unlocked state, the first indicator indicates the lock-standby state of the first door in a first mode, and the second indicator indicates the unlocked state of the second door in a second mode.